

A CHARACTERISTIC NEW BLACKFLY SPECIES FROM SHENNONGJIA NATURAL RESERVE, CHINA (DIPTERA, SIMULIIDAE)

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Abstract A new species, *Simulium (Simulium) dentastylum* sp. nov., is described from a male species with its pupal exuviae collected from Shennongjia Natural Reserve, Hubei Province, China. The female and larva are yet unknown. This species is characterized by the unique shape of the male style. The type specimen is deposited in the Department of Biology, Guiyang Medical University.

Key words Simuliidae, *Simulium (Simulium)*, taxonomy, new species.

The Shennongjia Natural Reserve (SNR), Hubei Province, China is located at the convergent area between the Northern China district of Palaearctic Region and the Central China district of Oriental Region (Chen, 2002). While SNR is well known for its rich biodiversity, the faunal study of blackflies of this district has long been in a state of blank. Before 2002, there were 3 blackfly species reported in Hubei Province, but none of their collection sites is related to SNR (Chen and An, 2003). In 2005, a new species of subgenus *Simulium* collected from SNR was reported (Yang et al., 2005; Chen, 2007). Chen et al. (2006) added another two new species from there. Chen et al. (2006) also reported a catalogue of blackflies from SNR for the first time. In this catalogue, there were 12 species listed, including *Simulium (Gomphostilbia) guizhouense*, *Simulium (Nevermannia) novigracile*, and other 10 species belonged to subgenus *Simulium*, *S. (S.) hengshanense*, *S. (S.) hongpingense*, *S. (S.) lichuanense*, *S. (S.) quinquestriatum*, *S. (S.) sakishimaense*, *S. (S.) ephippiodum*, *S. (S.) xiaolongtanense*, *S. (S.) rufibasis*, *S. (S.) shennongjiaense* and *S. (S.) qianense*.

In this paper one new species from SNR is reported. The morphological description and taxonomic discussion is given.

Simulium (Simulium) dentastylum sp. nov. (Figs. 1-7)

Female. Unknown.

Male. Body length about 2.8 mm. Wing length about 2.5 mm.

Head. Slightly wider than thorax. Clypeus black, covered with grey pruinosity, and with sparse dark hairs. Upper-eye consisting of large facets of 17 horizontal and 18 vertical columns. Antenna composed of 2 + 9 segments, brown with scape yellowish brown. First flagellomere about 1.6 times as long as the following one. Maxillary palp composed of 5 segments; 3rd segment of

normal size; sensory vesicle small, about 0.20 times length of respective segment.

Thorax. Scutum brownish black, shiny, not patterned. Scutellum brownish black, with long dark hairs. Postscutellum black and bare. Pleural membrane and katepisternum bare. Legs. Fore coxa yellow, mid and hind coxae brown. All trochanters brown except basal half of fore and mid trochanters pale. All femora yellow except brown distal tip of hind femur. Fore and hind tibiae brownish black with largely pale yellow outer median portion, whereas mid tibia entirely pale yellow. All tarsi brown, except basal mid basitarsus, basal 3/5 of hind basitarsus and basal 1/2 of second tarsomere pale. Fore basitarsus slender, about 7.5 times as long as wide. Hind basitarsus enlarged, about 4.0 times as long as its width and about 0.9 times as wide as tibia. Calcipala of moderate size, pedisulcus distinct.

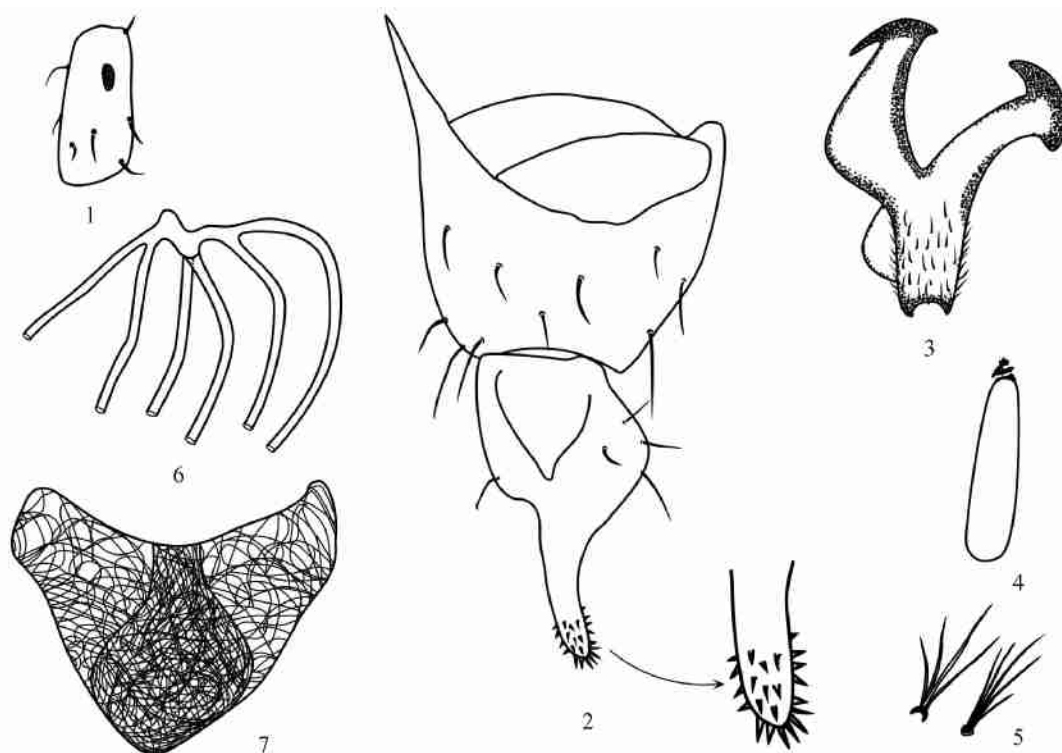
Abdomen. Basal scale brownish yellow with fringe of brown hairs. Terga brownish black except tergum 2 dull yellow with black hairs. Genitalia. Coxite somewhat subconical in shape. Style about as long as coxite, the shape is very characteristic, tapering distally which is inflated on basal 1/2 and abruptly narrowed on apical 1/2 and with a cluster of short, stout teeth on distal 1/5. Ventral plate with a broad base, plate body long plate-form and covered densely with fine black setae in ventral view, basal arms much broad and gently curved. Parameres each with numerous parameral hooks. Median sclerite long plate-form, somewhat widened distally.

Pupa. Body length about 2.6 mm.

Head and thorax. Integument brownish yellow, densely covered with tubercles. Head trichomes 3 pairs, all simple. Thoracic trichomes 6 pairs, split into 2-5 branches. Gill organ, with 6 filaments arranged in shortly-stalked pairs, about 1/2 length of pupal body, all filaments almost equal in length but outer filament of dorsal pair slightly thicker than those of other 5 filaments;

This project was supported by the National Natural Science Foundation of China (30660021) and the Excellent Youth Science Foundation of Guizhou Province.

Received 8 Apr. 2009, accepted 5 May 2009.



Figs. 1-7. *Simulium (Simulium) dentastylum* sp. nov. 1. Sensory vesicle. 2. Coxite and style. 3. Ventral plate. 4. Median sclerite. 5. Pupal thoracic trichomes. 6. Pupal filaments. 7. Cocoon.

dorsal and ventral pairs diverged in a vertical plane at about right angle, all filaments running practically parallel to one another.

Abdomen. Tergum 2 with 5 short spinous setae and a long simple seta on each side. Terga 3 and 4 each with 4 hooked spines directed forwards a long posterior margin on each side. Tergum 8 with spine-comb in transverse row, and very minute comb-like spine-groups on each side. Tergum 9 with a pair of blunt terminal hooks on each side. Sternum 5 with a pair of bifid situated close together on each side. Sterna 6 and 7 each with a pair of inner bifid and outer simple hooks widely spaced on each side. Cocoon. Simple, shoe-shaped low neck, loosely woven, with a few of small open spaces on each side near opening but lacking antero-lateral windows.

Mature larva. Unknown.

Holotype, slide mounted with pupal exuviae. The pupa was collected from fallen leaf in a small trickle of water, Hongping (31°32'N, 110°17'E; alt. 1700 m), Shennongjia, Hubei Province, water temperature 15°C, 14 Aug. 2004, by LUO Hong-Bin.

Distribution. Hubei Province, China.

Remarks. This new species is described based on the unique adult male specimen with pupal exuviae, and is characterized by the unique shape of the genitalia. There is no other known species that has a style bears, as in this new species, a cluster of short, stout teeth on distal 1/5. The new species seems to fall into the subgenus *Simulium* of *Simulium*.

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湖北神农架自然保护区一新特蚋种 (双翅目, 蚋科)

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摘 要 描述采自湖北神农架自然保护区一新蚋属蚋亚属新种, 齿端蚋 *Simulium (Simulium) dentastylum* sp. nov.。模式标本存于贵阳医学院生物学教研室。

齿端蚋, 新种 *Simulium (Simulium) dentastylum* sp. nov. (图 1~7)

新种据雄虫及其茧和蛹皮的综合特征归属于蚋属蚋亚属

Simulium (Simulium), 但该种雄性生殖器抱肢端节末端 1/5 具 1 簇短粗齿, 未见其他蚋种有此独特特征。

正模 (含相联系的茧及蛹皮), 湖北神农架红坪, 海拔 1 700 m, 2004-08-14, 罗洪斌采, 玻片号红坪 08-29。

词源: 拉丁词 *dentiae* (齿, 齿列), 示雄性生殖器抱肢端节 (style) 具齿簇。

关键词 蚋科, 蚋属, 蚋亚属, 分类学, 新种.

中图分类号 Q969.442.9